UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,240	08/01/2003	Roy Wong	56494US010	2455

32692 7590 10/08/2004

3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

EXAMINER	
PARKER, FREDERICK JOHN	

ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 10/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/633,240	WONG, ROY	
	Examiner	Art Unit	
	Frederick J. Parker	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17 and 40-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *40-42* is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-22, drawn to layer embossing method, classified in class 427, subclass 264.

II. Claims 23-40, drawn to apparatus, classified in class 118, subclass 200.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus can be used for another and materially different process, such as transfer applying coatings from the stamper to a substrate, or simultaneously embossing a coating and a pliable substrate.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Thomas Haverstock on 9/27/04 a provisional election was made without traverse to prosecute the invention of group I, claims 1-22. Affirmation of this election must be made by applicant in replying to this Office action. Claims 23-40 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Drawings

7. At least Figures 1-3 appear that they should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified

and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance. Please apply "Prior Art" label where appropriate.

Specification

8. The disclosure is objected to because of the following informalities: page 4, last paragraph, please update SN's to include patent number's. if available. Appropriate correction is required.

9. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: antecedent basis for subject matter of claims 12,13 does not appear to be present in the specification. Please insert in specification, or point out where subject matter is present.

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claim 1 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 36 of U.S. Patent No. 6517995. Although the conflicting claims are not identical, they are not patentably distinct from each other because both claims emboss a liquid with a stamp using a specific pressure regime, the instant application also requiring a positioning step which is an obvious variation to cause patterning of the liquid.

12. Claims 1,14-16, 18-20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1,10-12, 14-15 of copending Application No. 10/251103. Although the conflicting claims are not identical, they are not patentably distinct from each other because both claims emboss a liquid layer with a stamp which displaces the layer to emboss the pattern, a controlled pressure of the stamp for causing the embossing being an obvious variation. Claims 14-16,18-20 corresponding to claims 11-13 of 10/251103, respectively, the use of an ink being an obvious liquid to be embossed.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 1-5,7,9,10,14,15,17-20,22 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Hector US 5804017.

Hector teaches a method of embossing a liquid solution polymer layer on a substrate using a flexible stamper in chamber apparatus of figures 2 & 5, in which there is an opening above and below the flexible stamper, so that a differential pressure applied distorts the stamper to cause it to distort/ bulge outward to contact and emboss the layer (col. 2, 44 to col. 3, 10). The stamper is distorted by applying pressure to an upper chamber opening at a rate to controllably move the stamper assembly into the liquid (col. 6, 31-41), e.g. "controlled pressure". The flexible stamper itself is made of polymeric materials, such as polyester, polyurethane (an elastomer), etc per claims 14-15. The stamp is applied to a structural body by clamp means, the body further comprising a transparent plate 18 of quartz glass, per claims 17-20. Further, the chamber portion comprising the substrate with liquid coating may be placed under vacuum while the upper chamber is maintained at a higher pressure, causing downward movement of the stamper (col. 5, 30-39), per claims 2-5,22. The stamp is necessarily inherently aligned over the liquid layer to cause proper embossing, per claim 7, and utilizes the fixture portions shown in figures 2-5 and accompanying descriptions. The embossed liquid layer is subsequently cured per claim 22 (abstract).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

17. Claims 6,8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hector.

Hector is cited for the same reasons previously discussed, which are incorporated herein. While Hector teaches pressurizing the chamber above the stamp to cause movement, using "leaked air" is not taught. However, since pressurized air is commonly used for pressurization/ pneumatic movement, it is the Examiner's position that it would have been obvious to use compressed air "leaked" into the upper chamber of Hector to cause pressurization to move/distort the flexible stamp as required by the method. As to claim 8, aligning the stamp using human visual means (which is an optical measuring method) would have been an obvious and ordinary variation within the purview of one skilled in the art to assure the design on the stamp is properly applied into the liquid coating layer.

18. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hector in view of Cheon US 2003/0168639 or Lueder et al US 2003/0016196.

Hector is cited for the same reasons previously discussed, which are incorporated herein. Using a nanoparticle ink as the liquid layer is not disclosed.

Lueder teaches applying pattern wise coatings of a paste or ink of nanoparticles of semi-conductor CdSe or CdTe applied by ,means such as spin coating, casting, etc [0034-35]. Alternatively, Cheon stamps patterns into metallic nanoparticle inks followed by heat-treating to form conductive metal patterns, the particles being of transition metals, lanthanides, etc [0028,0037]. Since Hector is directed to forming relief patterns by stamping liquid layers, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Hector by using the liquid nanoparticle inks of Cheon or Lueder as the liquid layer to be embossed to form patterned semi-conductor or conductive metal patterns on substrates for electronic applications.

19. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hector in view of Maracas et al US 5937758.

Hector is cited for the same reasons previously discussed, which are incorporated herein. A PDMS stamp is not cited. However, Maracas et al teaches making a micro-printing stamp comprising a flexible layer 104 of the elastomer PDMS. Since Hector teaches the use of polymeric materials, such as polyester, polyurethane (an elastomer), etc, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Hector by incorporating the PDMS stamp of Maracas as the flexible stamp material because Hector teaches the use of polymeric materials, including elastomer, for the stamp to form relief patterns in the relief layer.

20. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hector in view of Leitz Jr US 3883383.

Hector is cited for the same reasons previously discussed, which are incorporated herein. A metal foil as the stamp means is not disclosed. However, Leitz Jr teaches the use of making membranes by embossing liquid layers with flexible/ pliable metal (e.g. aluminum) foils which offer increased simplicity and pattern availability, as well as economic benefits. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Hector by substituting the flexible metal foil embossing means of Leitz Jr for the flexible embossing means of Hector because of the expectation of flexible polymer or metal embossing means would have provided equivalent results in the liquid layer, while also providing the recognized benefits outlined above.

21. Claims 40-42 distingusih over the prior art which does not teach nor suggest edge coating a roll of PSA tape with a hot melt composition to prevent tackification of the edge.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick J. Parker whose telephone number is 571/ 272-1426. The examiner can normally be reached on Mon-Thur. 6:15am -3:45pm, and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 571/272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Frederick J. Parker
Primary Examiner
Art Unit 1762

fjp